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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/08/2008

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EXAMINER

MCCULLEY, MEGAN CASSANDRA

ART UNIT

PAPER NUMBER

1796

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/522,014	Applicant(s) TSUJIMOTO ET AL.	
	Examiner Megan McCulley	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 10 defines the Zr containing compound as a Zr containing organic compound. However, claim 1 requires the Zr containing compound to be at least one of $\text{Zr}(\text{OC}_4\text{H}_9)_3(\text{C}_5\text{H}_7\text{O}_2)$ and $\text{Zr}(\text{OC}_4\text{H}_9)(\text{C}_5\text{H}_7\text{O}_2)(\text{C}_6\text{H}_9\text{O}_3)_2$, both of which are organic compounds.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashige et al. (JP 9328336) in view of Kimura et al. (WO 98/15600 using U.S. Pat. 6,407,033 as the English Translation). The English language translation of the Japanese patent is used for the citations below.

Regarding claims 1, 2, 6, 7 and 10: Takashige et al. teaches a composition comprising TiO_2 (para. 8), an organic zirconium containing compound such as $\text{Zr}(\text{C}_5\text{H}_7\text{O}_3)(\text{OBu})_3$ (para. 33) which has the same structure as the claimed

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$\text{Zr}(\text{OC}_4\text{H}_9)_3(\text{C}_5\text{H}_7\text{O}_2)$, and a hydrolyzable silicone resin (para. 15). The zirconium component to the titanium component is 0.02-0.5 to 1 (para. 18), which overlaps/touches the claimed ranges. The amount of the silicone component to the titanium component is 0.2-2.5 to 1 (para. 19), which overlaps the claimed range. The titanium particles are dispersed and homogenous since they have been agitated for an hour (para. 33).

Takashige et al. does not teach SiO_2 particles in the mixture. However, Kimura et al. teaches a similar coating composition comprising an organic zirconium component (col. 6 lines 54-65), a silicone component and a titanium oxide component. The silica sol/colloidal silica (col. 15 lines 24-26) is used in an amount of silica to silicone of 0.76:1 (example 8, table 1). Takashige et al. and Kimura et al. are analogous art because they are both concerned with the same field of endeavor, namely photocatalyst coating compositions of silicone, titanium oxide and zirconium components. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the colloidal silica of Kimura et al. with the composition of Takashige et al. and would have been motivated to do so for such desirable properties as a carrier for the photocatalyst, which improves adhesiveness, as evidenced by Kimura et al. (col. 2 lines 10-63) and provides a film with excellent transparency, uniformity and hardness as evidenced by Kimura et al. (col. 6 lines 19-21).

Regarding claim 4: Takashige et al. teaches a coat/film obtained after heat-treating/curing (para. 34)

Regarding claim 5: Takashige et al. teaches a glass substrate/coated article having a cured coat/film obtained after heat-treating/curing (para. 34).

Regarding claim 8: Takashige et al. teaches a single layer in that no interlayers are necessary and it is applied directly to a base material (para. 23).

Regarding claim 9: While Takashige et al. does not directly teach that the Zr component accelerates cross-linkage, since it is in the composition, it implicitly acts to accelerate the cross-linkage. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain a composition with these properties.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takashige et al. (JP 9328336) in view of Kimura et al. (WO 98/15600 using U.S. Pat. 6,407,033 as the English Translation) as applied to claim 1 above and when taken with Koyanagi et al. (U.S. Pat. 7,192,986). The English language translation of the Japanese patent is used for the citations below.

Regarding claim 3: Takashige et al. teaches the silica sol Z-1, trade name Cataloid SI-30 (col. 15 lines 24-26) but does not teach the particle size of this silica sol. The silica sol used in Takashige et al., Cataloid SI-30, has a mean particle size of 12 nm as evidenced by Koyanagi et al. (col. 8, Example 13, lines 59-62).

Response to Arguments

Applicant's arguments filed August 28, 2008 have been fully considered but they are not persuasive, because:

A) Applicant's argument that Takashige et al. does not teach the SiO₂ particles in the mixture is not persuasive. The rejection as set forth above is based on 35 U.S.C §103 since all the claimed limitations are found in the prior art as a whole. If Takashige et al. taught all of the limitations the rejection would be based on §102. Kimura et al. provides the teaching and motivation to combine the SiO₂ particles that Takashige et al. is lacking.

B) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the zirconium organic compound and the SiO₂ are dispersed in the silicone resin to act as a binder) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Only the TiO₂ is claimed as being dispersed in the resin (claims 1 and 6).

C) Applicant's argument that Kimura et al. do not teach an organic zirconium component is not persuasive. Kimura et al. teaches organic zirconium components such as zirconium dibutoxide acetylacetate (col. 6 lines 54-65), which is a related compound to the claimed zirconium formulas.

D) In response to applicant's argument that the SiO₂ of Kimura et al. is used to give adsorptive properties instead of improving the strength, the fact that applicant has

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recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Further, the SiO₂, organic zirconium and TiO₂ are dispersed in the binder of the silicone resin (see examples 1-25 col. 16).

E) In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, at the time of the invention a person having ordinary skill in the art would have found it obvious to combine the colloidal silica of Kimura et al. with the composition of Takashige et al. and would have been motivated to do so for such desirable properties as a carrier for the photocatalyst, which improves adhesiveness, as evidenced by Kimura et al. (col. 2 lines 10-63) and provides a film with excellent transparency, uniformity and hardness as evidenced by Kimura et al. (col. 6 lines 19-21).

F) Applicant's argument that allegedly only picking and choosing from the teachings of the references results in the claimed invention is not persuasive. There is no evidence supplied that this is the case. Both references have clear teaching to the claimed limitations as set forth above. Further, Koyanagi et al. is not relied upon for

teaching but instead for evidence as set forth above. Koyanagi et al. merely provides evidence that the disclosed silica of Kimura et al. meets the claimed particle size.

G) In response to applicant's argument that the references are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Takashige et al. and Kimura et al. are analogous art because they are both concerned with the same field of endeavor, namely photocatalyst coating compositions of silicone, titanium oxide and zirconium components.

H) In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

I) To show unexpected results, the invention must be compared with the closest prior art (see MPEP 716.02(e)). In this case, Takashige et al. teaches the particular claimed zirconium, therefore comparison with a composition not using the particular claimed zirconium cannot be used to show unexpected results over the prior art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan McCulley whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/

Supervisory Patent Examiner, Art Unit 1796

/M. M./

Examiner, Art Unit 1796